

The Austrian Botanic Gardens Work Group, an Example of Active Networking to Promote Small Botanic Gardens

Roland K. EBERWEIN *

(Regional Museum of Carinthia, Carinthian Botanic Center, Klagenfurt/Woerthersee, Austria)

Abstract: The continuously increasing demands on botanic gardens during the last few decades have led to a huge increase in administration and an urgent need for additional specialized personnel, especially botanists, teachers, database specialists and administrative staff. Instead of meeting these requirements, many botanic gardens are facing a severe decrease in funding and personnel. Larger gardens provide the opportunity to distribute several tasks to different employees, whereas small gardens are short staffed and often run by a single curator who has to fulfill all functions. In order to meet actual demands more easily, the Austrian botanic gardens are linked nationally via an active workgroup. This network not only allows the distribution of information but also facilitates the sharing of duties. A listserv speeds up the communication and correspondence within the workgroup, collection priorities and projects (e.g., GSPC) are coordinated, seedbanking becomes decentralized, printed matters are shared and distributed, etc. Small gardens with only few employees can participate in projects by taking on small—ideally using with their special resources—in order not to fall behind. In addition, there is also an urgent need for international networking by means of plant and seed exchange (*Index Seminum*), BGCI membership, discussion groups, personal contacts and projects. Mission statements, special marketing strategies for public relations, integrating projects of other workgroup members and adapted public awareness programs are important to focus attention to small gardens and to help them keep alive.

Key words: Active networking; Small botanic gardens; Implementing of standards; Task sharing; Mission statement

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Introduction

Modern botanic gardens are institutions with missions far from pure gardening and landscape architecture. Regardless of size, whether the garden is linked to a university or a museum, if it is a historical or a modern garden, or is small or large, a continually increasing bundle of jobs has to be worked off. These additional jobs enclose a wide range from scientific research (Bramwell and Kiehn, 2000; Kiehn, 2008b), transmission of knowledge for all age groups and all levels of education, events, landscape conservation, databasing etc. and finally to modern management (also see Cheney *et al.*, 2000). These different jobs need specialized and well educated employees and the corresponding resources. In

times of decreasing resources, the ‘BG-paradoxon’ occurs: the less funds the more tasks. While larger gardens are able to lighten this situation temporarily by a new arrangement of tasks, small gardens with only few employees are on the ropes very fast (Eberwein, 2004a, c). New approaches to protect small gardens and their huge diversity are quickly required.

The small (1.2 hm²) botanic garden of the Carinthian Botanic Center (KL) in Klagenfurt (Austria) acts as a model to demonstrate the following strategic considerations. A short glimpse at the central missions of this garden shows a huge variability of different tasks (also see Bramwell and Kiehn, 2000; Wyse Jackson and Sutherland, 2000; Funk, 2003; Eberwein, 2004a; Kiehn *et al.*, 2006):

* Author for correspondence; E-mail: roland.eberwein@landesmuseum.ktn.gv.at
Address: Prof. -Dr. -Kahler-Platz 1, A-9020 Klagenfurt/Woerthersee, Austria
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Resource for scientific research (systematics, taxonomy, morphology, anatomy)
 Reference material for determination of plants
 Botanical background for field studies (e. g., ecology)
 Maintenance culture (nature conservation, protection of species)
 Horticultural research
 Horticultural training
 Preservation of genetic resources (living plants, seed bank)
 Exchange of genetic resources (international seed exchange, Index Seminum)
 Listing of locality or habitat data of wild plants
 Research on wild plants, their protection and management (ex situ and in situ)
 Integrated plant protection
 Ethnobotanical research
 Preservation of cultivated species
 Information about toxic and medicinal plants including reference material
 Drug prevention and information about drug plants
 Pollution monitoring
 Recolonization of endangered species
 Urban and landscape planning
 Teacher's training
 Information centre for horticultural and botanical questions
 Guided tours for children, pupils, adults, and seniors
 Integration of handicapped persons (special adaptations for the blind in the Botanic Garden Klagenfurt)
 Tourism
 Recreation area for the people
 National education
 Resource (collection of material) for exhibitions
 Teaching material for schools

Taking into account that this institution employs only five gardeners, one garden assistant, and a half time curator it is evident that this garden has—like other small botanic gardens—severe problems to hold itself up. In addition, the modern botanic garden has to use national as well as international standards in several fields of activity. As an example, educational programs must be in congruence with national laws and norms of teaching (Eberwein, 2004b, d, 2007, 2008; Doralt, 2010).

Rising awareness of protecting plant life led to another example: several important regulations with national and international consequences for botanic gardens. For instance, the Convention on Interna-

tional Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity (CBD) with the subsequent Global Strategy for Plant Conservation (GSPC), the Global Biodiversity Information Facility (GBIF), the International Plant Exchange Network (IPEN), and international as well as national laws for protecting nature (Table 1). These conventions and laws set off a huge avalanche of challenges for botanic gardens like administration of CITES, administration of seed and plant exchange with international accession numbers, databasing by using international standards, special programs for plant conservation (in situ and ex situ), seedbanking, administration of collecting

Table 1 Important regulations with national and international consequences for botanic gardens concerning plant life protection

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	http://www.cites.org/
Convention on Biological Diversity (CBD)	http://www.cbd.int/
Global Strategy for Plant Conservation (GSPC)	http://www.cbd.int/gspc/
Global Biodiversity Information Facility (GBIF)	http://www.gbif.org/
International Plant Exchange Network (IPEN)	http://www.bgci.org/resources/ipen/
Laws for protecting nature	
National laws	
International laws (e. g., FFH-Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora [European Union])	http://eur-lex.europa.eu/LexUriServ/site/de/consleg/1992/L/01992L0043-20070101-de.pdf

permits and phytosanitary certificates, imparting of botanical, regulating and administrative facts and knowledge to the public as well as to scientists, or problems with invasive neophytes (see Wyse Jackson and Sutherland, 2000; Lobin *et al.*, 2004; Kiehn, 2007; Sieder *et al.*, 2007; Kiehn, 2008a,b; Kiehn *et al.*, 2009; Eberwein, 2010; Eberwein and Berg, 2010; Eberwein *et al.*, 2010). Managing only the core administration of the examples above is a heavy challenge.

Small gardens are short staffed and often run by a single curator who has to fulfill all functions. It is easy to imagine that it is simply impossible for a single person to manage all these jobs simultaneously. Generally, botanic gardens urgently need additional personnel: botanists, teachers, database specialists and administrative staff. Instead of meeting these requirements, many botanic gardens have to face a severe decrease in funding and personnel.

The rising demands on botanic gardens and a lot of common goals led to the foundation of the Austrian Botanic Gardens Work Group in 1998 (Kiehn *et al.*, 2007). The main targets of the work group are:

- Creation of a communication platform
- Annual meetings
- Joint representation of the Austrian Botanic Gardens
- Planning and coordination of common duties
- Lobbying
- Resource sharing
- Networking

The latter target became more and more important during the last years. The concentration of bota-

nic gardens, resources and information in the capital of Austria, Vienna, led to imbalances between the focus in Vienna and the province-gardens. It was necessary to change networking from a Vienna-centered service network to a more decentralized active network in order to better incorporate province-gardens, to meet current tasks and to promote these gardens. According to individual resources and specialities of province-gardens, they take over common tasks or play an active role in projects or programs. Relations of some examples are shown in Fig. 1. These are in detail: Projects, memberships and distribution of information which is shortly described below.

Within the framework of the Global Strategy for Plant Conservation (GSPC) a compilation of red list plants in Austrian botanic gardens was made by the Botanic Garden of the University of Vienna (WU). Only this major garden was able to carry out this project. WU sent an employee to all gardens to collect data which could not be assembled by them. The red list plants project would not be possible without a WU-centered organization. Another project, the Orchids of Madagascar, is a joint venture of WU and the University of Salzburg (SZU) (Kiehn, 2007; Sieder *et al.*, 2007). The Botanic Garden of the University of Innsbruck (IB) organized an international project funded by the European Union with the topic 'education and botanic gardens'. Austrian Partners in this project were the botanic gardens in Klagenfurt (KL) and Vienna (WU). Although Klagenfurt is setting many initiatives in education (Eberwein, 2004b, d, 2007, 2008), this small garden has not

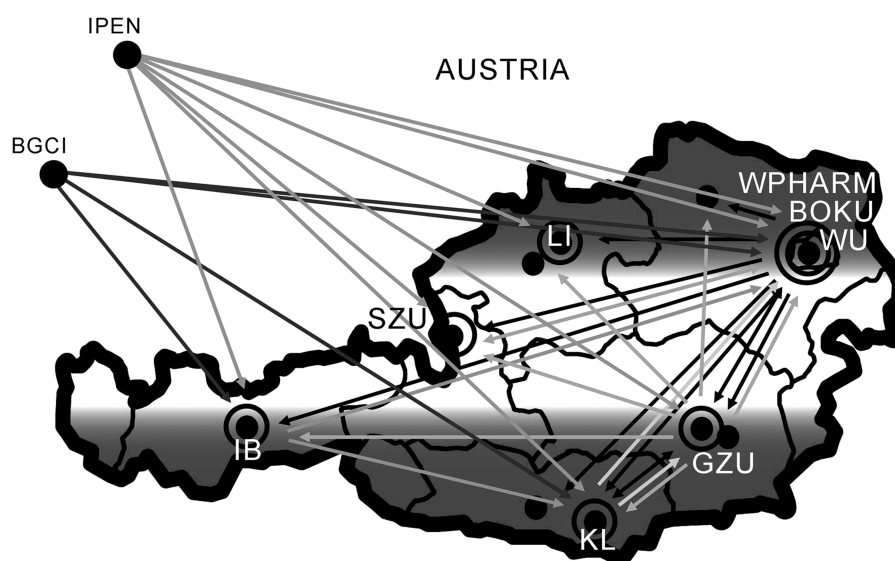


Fig. 1 Schematic graph of some relations between Austrian botanic gardens and IPEN and BGCI

enough capacity to conduct an international project. The same is true for seedbanking (Kiehn *et al.*, 2009). The main focus is on central seedbanks in Vienna (University of Natural Resources and Life Sciences BOKU and WU) and two decentralized seedbanks at the University of Graz (GZU) and the Botanic Garden Klagenfurt (KL). Klagenfurt-in co-operation with Vienna (WU) and Graz (GZU)-took over the publication initiative concerning neophytes in botanic gardens (Kiehn, 2008a; Eberwein and Berg, 2010; Eberwein *et al.*, 2010). A decentralized listserver was installed at the University of Graz (GZU) to supply all member gardens with informations faster. International memberships play a very important role. For instance, the International Plant Exchange Network IPEN (Lobin *et al.*, 2004) considerably increased the quality of Indices Seminum. Current Austrian members of IPEN are BOKU, GZU, IB, KL, LI, SZU, and WU. Unfortunately only four Austrian gardens are members of Botanic Gardens Conservation International BGCI (IB, KL, WU, WPHARM). International sharing of information and evaluation is absolutely necessary. A BGCI membership is therefore strongly recommended. The Austrian Botanic Gardens Work Group doesn't act as a supervisory authority, but as a kind of 'superorganism'.

An active network can help sharing information and tasks, integrating small or less funded gardens into national or international programs and therefore bring them into the focus of attention in order to hopefully prevent them from further withdrawal of funding or closure.

References:

- Bramwell D, Kiehn M, 2000. Science and Horticulture [A]. In: Cheney J, Navarrete NJ, Wyse Jackson P eds. Action Plan for Botanic Gardens in the European Union [M]. National Botanic Garden of Belgium Meise
- Cheney J, Navarrete NJ, Wyse Jackson P eds, 2000. Action Plan for Botanic Gardens in the European Union [J]. *Scripta Botanica Belgica*, **19**
- Doralt W, 2010. KODEX Schulgesetze (education act, Austria), 11th ed. Vienna: LexisNexis ARD ORAC
- Eberwein RK, 2004a. Botanische Sammlungen-eine historische Altlast? (Botanical collections-a historic burden?). König C, Fischer MA ed., 11. Österreichisches Botanikertreffen in Wien, 3–5 September 2004. Kurzfassungen der Beiträge. Wien: Institut für Botanik der Universität Wien, 52
- Eberwein RK 2004b. Das "Bildungsprogramm" des Kärntner Botanikzentrums: Der Versuch, eine vor der Schließung stehende Institution positiv ins Blickfeld zu rücken. (The education-program of the Carinthian Botanic Center: an attempt to bring an institution threatened by closure into a positive focus). König C, Fischer MA ed. 11. Österreichisches Botanikertreffen in Wien, 3–5 September 2004. Kurzfassungen der Beiträge. Wien: Institut für

- Botanik der Universität Wien, 51
- Eberwein RK, 2004c. Das Kärntner Botanikzentrum, ein Luxus mit baldigem Verfallsdatum? – Oder: Über den (Stellen) Wert einer naturwissenschaftlichen Institution in Kärnten. (The Carinthian Botanic Center, a luxury with an early date of expiry? – Or: About the (local) value of a scientific institution in Carinthia). Leitner FW ed. *Rudolfinum; Jahrbuch des Landesmuseums für Kärnten* Vol. 2003. Klagenfurt: Landesmuseum Kärnten, 337–341
- Eberwein RK, 2004d. Education in Botanic Gardens? – A case study of a “Potemkin’s Village” in Carinthia (Austria). Novikov VS, Kavtaradze DN, Timonin AK, Murashov VV, Sherabkov AV eds. *Fundamental problems of botany and botanical educations; Problems and perspectives. Abstracts of International Scientific Conference on 200-anniversary of the Dept. of Higher Plants of MSU (Moscow, 26–30 January 2004)*. Moscow: KMK Scientific Press Ltd, 154–155
- Eberwein RK, 2007. Das Carinthian Bio-Lab, eine neue Bildungseinrichtung des Landesmuseums Kärnten und der Arge NATURSCHUTZ. (The Carinthian Bio-Lab, a new educational institution of the Regional Museum of Carinthia and the Arge NATURSCHUTZ). Leitner FW ed. *Rudolfinum; Jahrbuch des Landesmuseums für Kärnten* Vol. 2005. Klagenfurt: Landesmuseum Kärnten, 337–338
- Eberwein RK, 2008. Das Vermittlungsprogramm des Kärntner Botanikzentrums. (The imparting programme of the Carinthian Botanic Center). Leitner FW ed. *Rudolfinum; Jahrbuch des Landesmuseums für Kärnten* Vol. 2006. Klagenfurt: Landesmuseum Kärnten, 217–222
- Eberwein RK, 2010. New challenges and standards as a chance for small botanic gardens? Ma J ed. *The International Symposium of Shanghai Chenshan Botanical Garden, Shanghai Chenshan Plant Science Research Center, Chinese Academy of Sciences*. Oct. 11–14, 2010, Shanghai, China. Shanghai: Chenshan Botanical Garden, Shanghai, 22
- Eberwein RK, Berg C, 2010. Pflanzen mit invasivem Potenzial in Botanischen Gärten. I: *Pinellia ternata* (Araceae) [J]. *Carinthia II*, **200**./120. (1): 81–86
- Eberwein RK, Berg C, Lechner M *et al.*, 2010. Pflanzen mit invasivem Potenzial in botanischen Gärten; Initiativen der ARGE Österreichischer Botanischer Gärten [J]. *Carinthia II*, **200**./120. (1): 77–80
- Funk V, 2003. The importance of herbaria [J]. *Plant Science Bulletin*, **49** (3): 94–95
- Kiehn M, 2007. Box 9. The CITES-*Bulbophyllum* checklist-projects at the Botanical Garden, University of Vienna. Oldfield S, McGough N. A CITES manual for botanic gardens. Richmond, UK: Botanic Gardens Conservation International
- Kiehn M, 2008a. How to deal with invasive and potentially invasive plant species in living plant collections [J]. *Sauteria*, **16**: 215–216
- Kiehn M, 2008b. Role of botanic gardens science towards the achievement of the 2010 targets of the Global Strategy for Plant Conservation. Ursem WNJ, Van den Wollenberg LJW, Ammann NH. *Second World Scientific Congress: Challenges in Botanical Research and Climate Change*. Delft: Sieca Repro
- Kiehn M, Bernhardt KG, Berg C, 2009. Seed banking endangered species of Austrian native flora; first steps towards a decentralised approach [J]. *Ensconews*, **5**: 14–15
- Kiehn M, Bernhardt KG, Eberwein RK, 2007. The Austrian Botanic Gardens Working Group. *Proceedings of the 3rd Global Botanic Gardens Congress*; Wuhan. Wuhan: BGCI
- Kiehn M, Schumacher F, Stampf J, 2006. The “Pannonian Group” of the Botanical Garden, University of Vienna: its potential for environmental education, ex-situ conservation, landscape architecture, and horticulture. 1st European Congress for Conservation Biology. Eger, Hungary, 22–26 Aug. 2006. *Book of Abstracts*. Eger: Society for Conservation Biology
- Lobin W, Von Den Driesch M, Klingenstein F *et al.*, 2004. International Plant Exchange Network (IPEN). An exchange system for botanic gardens for non-commercial purposes according to the CBD. Stolpe G, Fischer W eds. *Promoting CITES-CBD Cooperation and Synergy*, **116**: 231–234
- Sieder A, Rainer H, Kiehn M, 2007. CITES checklist for *Bulbophyllum* and allied taxa (Orchidaceae). http://www.cites.org/common/com/NC/tax_ref/Bulbophyllum.pdf; 319 pp.
- Wyse Jackson PS, Sutherland LA, 2000. *International agenda for botanic gardens in conservation*. Richmond UK: Botanic Gardens Conservation International